BAYWOOD REPRINTS

JOURNAL OF
COLLEGE STUDENT RETENTION
Research, Theory & Practice

Edited by: Dr. Alan Seidman

Volume 13, Number 4 — 2011–2012

College Student Persistence to Degree: The Burden of Debt

Cliff A. Robb, Beth Moody, and Mohamed Abdel-Ghany

BAYWOOD PUBLISHING COMPANY, INC.
26 Austin Avenue, PO Box 337, Amityville, NY 11701
phone 631-691-1270 · **fax** 631-691-1770 · **toll-free order line** 800-638-7819
e-mail baywood@baywood.com · **website** http://baywood.com

J. COLLEGE STUDENT RETENTION, Vol. 13(4) 431-456, 2011-2012

COLLEGE STUDENT PERSISTENCE TO DEGREE: THE BURDEN OF DEBT

CLIFF A. ROBB, PH.D.

BETH MOODY, M.S.

MOHAMED ABDEL-GHANY, PH.D.

University of Alabama

ABSTRACT

Data collected from two major universities (one in the Midwest and one in the Southeast) in the United States were used to analyze student persistence behavior and perceptions of debt. Results from four separate logistic regression analyses suggested that financial factors play a significant role in student persistence behavior as well as in student perceptions of debt. Controlling for demographic characteristics, as well as a number of key student factors, student loan debt, credit card use behavior, and the presence of other debts, had a significant impact on whether students reported ever reducing credit hours for financial reasons, whether students ever dropped out for financial reasons, and the extent to which students reported difficulty persisting due to the psychological burden of student loan debt and consumer debt. Findings suggest that some persistence issues may be alleviated through targeted education programs.

INTRODUCTION

The persistent rise in costs related to obtaining a college degree has been well documented (College Board, 2007a). In an increasingly difficult financial market,

doi: http://dx.doi.org/10.2190/CS.13.4.b
http://baywood.com

school enrollments may very well see a significant increase. This is due primarily to the fact that general recessionary trends tend to reduce job opportunities for individuals who do not have a college degree more than they reduce job opportunities for those with a college degree (Paulson, 1990).

Such effects may be larger in the case of community colleges or vocational schools, depending on what sectors of the economy are impacted (Betts & McFarland, 1995; Paulson, 1990). Theoretically, the opportunity costs associated with attending college would be lessened in a recessionary period, as individuals may have more difficulty finding work or a competitive return on their time. Similarly, there is added pressure on current students to stay in school in light of the weak job market and poor prospects for employment. The issue of increasing costs is particularly salient as more and more of the assistance available to students from lower and middle income families is provided in the form of student loans rather than grants (Baum, 2003). As college becomes increasingly costly, it is important to consider the impact of increasing student loan debt, in combination with other expenses associated with degree obtainment, on persistence and student attitudes.

For students entering 4-year institutions in the United States, there is roughly a 50% chance of receiving a degree (Brawer, 1996; Hauptman, 2008). Although a significant number of those who fail to persist are individuals who purposefully withdraw based on personal preferences, many students who wish to continue in their education may be pressured to depart early. Understanding the factors that influence this early departure behavior is key to solving the long-studied "departure puzzle" (Braxton, 2000; Braxton, Johnson, & Shaw-Sullivan, 1997; Tinto, 1993). A number of studies have sought to develop a better understanding of student persistence behavior, emphasizing various financial and non-financial factors. The present study places an emphasis on financial factors, both from the standpoint of perceived burdens and reported behaviors. Whereas the available literature recognizes the role of financial factors in persistence behavior, the present analysis builds on previous research dealing with the impact of financial aid while also providing some new details regarding the role of credit card use behaviors and student perceptions of student loan and consumer debt burdens.

REVIEW OF LITERATURE

Rising Costs of College

The cost of attending college has increased significantly over the past decade. From the 1996-97 to the 2006-07 school year, published in-state tuition increased an average of $216 per year (in 2007 dollars), an increase of 4.4% after adjusting for inflation (College Board, 2007a). The cost of attending college often comprises a large amount of the family budget, especially among low- and middle-income households. Evidence suggests that growth in the areas of family income,

grant aid, and federal loans has not kept pace with the rising costs of college (College Board, 2005; Heller & Marin, 2002). This issue is compounded when one considers that many colleges increase tuition rates in difficult economic times, particularly in response to budget cuts at the state level (Heller & Marin, 2002). In many cases, these costs are shifted to students and their families, with little change in aid available. One option that has become all too common is the use of a credit card (or cards) to cover excess expenses (Baum & Saunders, 1998). Prior research consistently presents possession rates of greater than 70% among the college student population in the United States (Lyons, 2004; Nellie Mae, 2005; Norvilitis, Szablicki, & Wilson, 2003). More and more, students are turning to private sources to help fund higher education (College Board, 2007b; Schemo, 2002).

These factors have raised concerns that the increasing reliance on debt will place larger burdens on students in the long run (Baum & Saunders, 1998). Loan repayment is a significant expense for many of today's graduates, and often has an impact on student options (Swarthout, 2006; Zaff, 2004). Students who might have preferred employment in less lucrative sectors of the economy may be forced to reconsider based on excessive debt burdens. Survey data suggest that roughly 15% of students receiving student loans reported significantly altering their career plans based on their student loan debt (Baum, 2003). Further, high levels of debt after college may impact or delay other major life steps such as the purchase of a home or saving for retirement.

Changing Aid Environment

At the same time as costs of a college education are increasing across the board, the aid environment has undergone a significant change. Specifically, recent decades have seen a pronounced shift toward loans as the dominant form of student financial aid, with a decreasing emphasis on grants (Baum, 2003). As more support is provided to students in the form of loans, the financial burden, both in a real sense and a perceived sense, is increased. If loans are increasingly common, and evidence suggests that they are not growing at the same rate as tuition and other expenses related to college attendance, students may be required to seek other forms of support in meeting costs. Evidence suggests that this is so (Schemo, 2002), and a number of college administrators have expressed concerns over persistence and college student usage of credit cards as a means of financing their education (Pinto, Parente, & Palmer, 2001). One administrator went so far as to suggest that they [the university] lost more students to credit card debt than to academic failure (Commercial Law Bulletin, 1998). While this evidence is largely anecdotal, it is suggestive of a disturbing trend and paints a more complex picture of student persistence issues.

Education as an Investment

Cost is not the only factor in the decision to attend college. College attendance is also considered an investment in human capital. According to Becker (1993), education and training are the most important forms of human capital investment. From a purely economic perspective, the decision to persist may be viewed from a cost-benefit perspective, as students will logically persist in attending college until alternative investment options are perceived as being equally or more attractive (Bryant, 1990; Tinto, 1975). Leppel (2005) reports that it is assumed that students decide to attend or persist at college by weighing the present discounted value of the utility of present and future benefits and costs. Based on the life-cycle income hypothesis, borrowing by college students may be viewed as a rational decision based on the fact that college graduates expect to have a significantly higher earnings path than high school graduates (Baum & Payea, 2004; NCES, 2008). A college education increases a person's income, even after accounting for the direct and indirect costs associated with obtaining this education. College graduates are also more likely than others to engage in more responsible financial behaviors, such as participation in employer-provided health insurance and pension plans (Baum & Ma, 2007).

However, individuals are not perfectly rational, and it should be recognized that the increasing up-front costs of education might be a significant factor in individuals' decisions to persist. As costs increase, the perceived financial burden increases, and individuals may find it more difficult to justify the investment in education. These decisions are further complicated due to the fact that expenses are up-front and certain, while returns are long-term and uncertain.

Factors Related to College Student Persistence to Degree

Researchers have considered a number of factors when assessing persistence to degree among college students. Early work by Spady (1970) acknowledged the importance of student integration into the society of the institution. Those students who displayed lower levels of integration or who did not fully embrace the values of the institution would logically be more likely to discontinue association prematurely. However, analysis of integration is complicated by the fact that students must become involved on two distinct levels, academic and social, while also maintaining a balance between the two. Tinto (1975, 1993) formalized these concepts with the development of a comprehensive theoretical model of academic persistence. Tinto's (1975, 1993) model emphasized commitment on the part of the student at two distinct levels: commitment to completion of a degree; and commitment to the institution itself. It was theorized that commitment was closely associated with a number of distinct factors such as student characteristics, past experiences, and institutional features. This model is supported by Braxton, Johnson, and Shaw-Sullivan (1997) who outlined

five different perspectives thought to be crucial in modeling college student persistence behavior (economic, societal, psychological, organizational, and interactionalist).

A fairly strong body of literature is supportive of a link between student GPA and persistence (Bradburn, 2002; Haynes, 2008; Nora & Cabrera, 1996; Prather & Hand, 1986; Tinto, 1975). Recent findings by Baum (2003) indicated that part-time students were less likely to persist when compared to full-time students. Cabrera, Nora, and Castañeda (1992) found that intent to persist has the greatest total effect on persistence, followed by cumulative grade point average, financial aid, commitment to the institution, social integration, pre-college academic performance, commitment to degree completion, support from significant others, academic and intellectual development, and financial attitudes.

St. John, Cabrera, Nora, and Asker (2000) noted several key financial factors (financial aid, tuition, and other costs) as having strong explanatory power in analyzing the student persistence process. Their findings were also supportive of a positive association between financial aid and student persistence. The relationship between student aid and persistence has not been entirely consistent, however. St. John et al.'s findings were supported by Gross, Hossler, and Ziskin (2007), though they emphasized institutional financial aid specifically and noted only a modest association between financial aid and persistence behavior. Other findings suggest that retention rates increased in the second, third, and fourth years as acceptance of student loans increased (Wohlgemuth, Whalen, Sullivan, Nading, Shelley, & Wang, 2007). They also found a positive relationship between the reception of gift aid and retention rates. Bradburn (2002) found that the more aid a student received in the first year of college, the less likely a student was to leave before completing a degree. However, no significant differences were noted based on the different types of financial aid received. Contrary to these findings, McElroy (2005) noted evidence of declining persistence with increasing levels of aid. Further, in terms of year-to-year persistence, loan amounts have been found to have a negative effect on persistence (Nora, Barlow, & Crisp, 2006). This suggests that the relationship between student aid and persistence may be nonlinear. The impact of other financial factors such as consumer debt has not received as much attention, though Pinto and Mansfield (2006) noted a significant correlation between credit card balances and student loan debt.

Socioeconomic status has been inversely related to dropout in previous work (Bradburn, 2002; Braunstein, McGrath, & Pescatrice, 2001; Tinto, 1975, 1993). Students who come from more affluent households tend to have a better chance of persisting, all other factors being held equal (Braunstein et al., 2001). Bradburn (2002) found that roughly 24% of students from the lowest income quartile left college within the first 3 years compared with only 15% of students from the highest income quartile, whereas students in the middle two quartiles were likely to cite needing to work as a cause for leaving when compared with those in the

highest quartile. Previous studies have further noted an inverse relationship between levels of debt and academic persistence (Cofer & Somers, 1999; Reynolds & Weagley, 2003).

Analysis of student work behavior has suggested that some time spent working was beneficial to students (between 1 and 14 hours per week), though working longer hours (35 or more) was detrimental (Baum, 2003). Bradburn (2002) found that 42% of financially independent students left without completing a degree, compared with 17% of financially dependent students. Interestingly, she found that dependent students were more likely than independent students to cite needing to work as a reason for leaving school early (31% versus 19%).

Two key demographic characteristics, gender and race, both appear to have an impact on persistence. Significantly lower rates of retention during the first year of college and lower rates of graduation have been noted among ethnic minorities (Wohlgemuth et al., 2007). This is somewhat consistent with the findings of Reynolds and Weagley (2003), in which White and African-American students were noted as being more likely to graduate than students from other ethnic backgrounds. It has been found that male students are less likely to graduate than female students (Reynolds & Weagley, 2003; Wohlgemuth et al., 2007). Wohlgemuth et al. (2007) commented that institutional data from their study shows that females have higher grade point averages, which may contribute significantly to the observed differences in retention rates. Bradburn (2002) found that among students who left college early, women were more likely than men to say that the reason for leaving was because of a change in family status, conflicts at home, or personal problems. Men were more likely to cite academic problems or needing to work as reasons for leaving.

DATA AND METHODS

Sample

An online survey was e-mailed to the current student population of two major Universities, one in the Southeast (student body of approximately 22,000) and one in the Midwest (student body of approximately 25,000), during the Spring 2007 semester. A total of 3,008 usable surveys were obtained for an overall response rate of roughly 6%. Given the relatively low response rate, it is possible that the present sample may consist of a greater number of students with financial issues (i.e., students who are faced with financial issues may have been more likely to respond to the survey). Each respondent completed an 83-question survey covering a variety of demographic and personal financial issues. The sample was restricted to students under the age of 30 in the hopes of capturing a more representative sample of traditional students in the United States, while also attempting to capture those students who have dropped out for a period and returned, resulting in a usable sample of 2,258 college students. Demographic

characteristics for the reduced sample roughly mirrored the existing student populations with the exception that a larger proportion of the sample was female relative to the actual student population (66% versus 52.5%). Demographics for the sample are presented in Table 1.

The present analysis builds off of the interactionalist model popularized by Tinto (1975, 1993), with an emphasis on personal financial factors. The analysis was conducted in three separate stages, with successive dimensions added to the explanation of perceived burdens and persistence behavior in each stage. In stage 1, traditional demographic characteristics are analyzed, including gender, race/ethnicity, year in school, family education, and family income. In stage 2, student characteristics are added, including attendance, employment, GPA, and social/academic integration. In the third stage, financial factors are added to the model, including financial aid, loan debt, credit card debt, other loans, dependent status, and credit card use behavior. It is hoped that analyzing the variables in separate stages might yield more information regarding the relative importance of select independent variables that have proved to be significant in modeling persistence behavior in the past.

Dependent Variables

Survey questions used to develop the four separate dependent variables are presented in Table 2. The first dependent variable utilized is whether or not students report difficulty in completing a degree due to the emotional burden associated with their financial aid debt. Students who responded as being very likely, likely, or somewhat likely were coded as one, with all other respondents coded as zero. The second dependent variable for analysis is the likelihood that consumer debt will make it difficult to complete a college degree. Students who responded as being very likely, likely, or somewhat likely were coded as one, with all other responses coded as zero. The third dependent variable for analysis regards whether students reported reducing their credit hours for a variety of financial reasons. Students who responded affirmatively based on any of the reasons listed were coded as one, and students who responded that they had never reduced hours for any of those reasons were coded as zero. The fourth dependent variable for analysis was based on students' response to the question of whether they have ever dropped out of college for financial reasons. Students who reported dropping out for any of the reasons listed were coded as one, and student who reported never dropping out were coded as zero.

Independent Variables of Interest

Researchers have considered a number of factors when assessing persistence to degree among college students, including sociodemographic characteristics, student commitment and integration into the campus environment, and various

Table 1. Descriptive Statistics for the Entire Sample (N = 2,258)

Variable	Frequency	Variable	Frequency
Female	66%	Financially independent	21%
White	86.5%	Employed	61%
Full-time student	96%	Freshman involvement	44%
Greek involvement	20%	Not married	97%
Financial aid	61.5%	Other debit	14%
Student load debt*		Credit card debt**	
$0	20%	$0	59%
< $10,000	33%	< $1,000	22%
$10,000-$29,999	31%	< $1,000-$2,999	11%
≥ $30,000	6%	≥ $3,000	8%
Don't know	10%		
Grade point average		Year in school	
Less than 2.00	1.3%	Freshman	21.5%
2.00-2.90	25.3%	Sophomore	23%
3.00-3.90	67.4%	Junior	27%
≥ 4.00	6%	Senior	28.5%
Parent's income		Parent's education	
Low	20.5%	High school or less	12.5%
Middle	38%	Some college	25%
High	36%	College or more	61.5%
Don't know	5.5%	Don't know	1%

Continuous variables	Mean (Standard Deviation)	Min	Max
Credit card use	46 (8.4)	18	60

*Sample size reduced to 1,390, only those who report receiving some type of financial aid.
**Sample size reduced to 1,319, only those who report having a credit card.

Table 2. Survey Questions

Question	Potential responses
How likely is it that the emotional burden associated with receiving and repaying this aid will make it difficult for you to complete your college degree?	• Very likely • Likely • Somewhat likely • Not likely • Not at all likely
How likely is it that your consumer debt will make it difficult for you to complete your degree?	• Very likely • Likely • Somewhat likely • Not likely • Not at all likely
Have you ever reduced the number of credit hours you were taking so that you could work more hours for any of the following reasons:	• Never reduced credit hours for any of these reasons • To "make more money" • To make money to "live on" • To pay your credit card bills • To pay your school loans • To pay for other loans
Have you ever dropped out of college for any of the following reasons:	• Never reduced credit hours for any of these reasons • To "make more money" • To make money to "live on" • To pay your credit card bills • To pay your school loans

financial factors. The present analysis includes measures of gender, race, parental income, and parental education.

Student involvement is measured by freshman involvement (the degree to which they committed themselves to the university when they started), student performance in the form of GPA, and current enrollment status (indicating how committed they are to their education at the present time). For the relevant financial factors, possession of personal loans and student credit card use behavior is included in the model along with student loans. The measure of credit card use was developed by Roberts and Jones (2001), and measures the degree to which students engage in risky credit card behaviors. Table 3 presents the credit card use scale. Items measured by the scale are scored on a 5-point Likert-type scale, ranging from *strongly agree* (1) to *strongly disagree* (5). Lower scores indicate riskier behaviors, thus four of the items in the scale are reverse coded.

Table 3. Credit Card Use Scale

Question	Strongly Agree	Strongly Disagree
My credit cards are usually at their maximum credit limit	1	5
I frequently use available credit on one credit card to make a payment on another credit card	1	5
I always pay off my credit cards at the end of each month[a]	5	1
I worry how I will pay off my credit card debt	1	5
I often make only the minimum payment on my credit cards	1	5
I am less concerned with the price of a product when I use a credit card	1	5
I am more impulsive when I shop with credit cards	1	5
I spend more when I use a credit card	1	5
I am seldom delinquent in making payments on my credit cards[a]	5	1
I rarely go over my available credit limit[a]	5	1
I seldom take cash advances on my credit cards[a]	5	1
I have too many credit cards	1	5

[a]Indicates that the variable was reverse coded.

The present analysis includes a number of financial measures, including student loan debt, the presence of other debt, credit card use, and whether or not students are financially independent. Previous studies indicate an inverse relationship between debt levels and persistence. One aspect that has yet to be explored in full detail has to do with students' perceptions of their debt burden and how they behave as a result. In some cases, it may be more important to understand how students view their debt burden rather than knowing the absolute level of debt students are faced with.

RESULTS

Logistic regression was used to analyze four separate models related to college student persistence. In model one (presented in Table 4), students were asked to report the degree to which they felt that the emotional burden associated with their financial aid debt might make it difficult to complete their degree. For this model, only those respondents who reported receiving some form of financial aid were analyzed, resulting in a reduced sample ($N = 1,390$) relative to the other models. Each stage of the analysis was significant for model one. Across the three stages, the demographic variables of year in school and parental income were significant predictors of students reporting difficulty with persisting due to financial aid debt. Students from households with higher incomes were less likely to report any difficulty in persisting, with all other undergraduate students reporting less difficulty persisting due to the emotional burden of financial aid debt relative to freshmen. Academic performance appears to have an impact on how burdened students feel, as students with higher GPAs report feeling less burdened by their financial aid debt.

Numerous financial variables were significant in the first model. The amount of student loan debt proved to be significant, as students with increasing debt loads report a greater likelihood of being burdened. However, this pattern is not entirely consistent. Students who reported holding more than $30,000 in student loans were no more likely than students with no student loan debt to report feeling burdened. Finally, students reporting less risky credit card use behavior (higher scores on the credit card use scale) are less likely to report feeling emotionally burdened by their student loan debt. No other additional variables proved to be significant in the third stage of model one.

Logistic regression results for the second model, whether students report difficulty in persisting due to consumer debt, are presented in Table 5. Students' race, year in school, and parental income are significant predictors in all three stages of the analysis. White students are consistently less likely to report any difficulty persisting based on consumer debt. As in the first model, all other undergraduate students are less likely than freshmen to report difficulty persisting due to consumer debt. Compared to middle income households, students from low income households are more likely to report difficulties persisting whereas students from high income households are less likely to report difficulties persisting when emphasis is placed on consumer debt. Higher GPA is associated with a lower probability (41% and 26%, respectively) of reporting difficulty in persisting. Students who report greater freshman involvement are more likely to report difficulty persisting due to consumer debt.

A number of financial variables are significant in model 2. The results indicate that students report greater difficulty persisting due to consumer debt when they have higher levels of student loan debt (though again the highest level is not significant), as students with student loan debt amounts between $10,000 and

Table 4. Logistic Regression Results for Model 1, Probability that Student Reports Difficulty in Completing a Degree Due to the Emotional Burden of Their Financial Aid (N = 1,390)[a]

	Stage 1		Stage 2		Stage 3	
Variable	Point estimate	Odds-Ratio	Point estimate	Odds-Ratio	Point estimate	Odds-Ratio
Gender	0.123	1.131	0.173	1.190	0.068	1.071
Race	–0.144	0.866	–0.036	0.965	0.051	1.052
Year in school (Freshman omitted)						
Sophomore	–0.198	0.820	–0.313†	0.731	–0.412*	0.662
Junior	–0.846***	0.429	–0.983***	0.374	–1.264***	0.283
Senior	–1.046***	0.351	–1.216***	0.297	–1.561***	0.210
Parents' education (Less than high school omitted)						
College or more	–0.441**	0.643	–0.431**	0.650	–0.273	0.761
Less than college	–0.192	0.825	–0.243	0.784	–0.144	0.866
Parents' income (Middle income omitted)						
Low income	0.221	1.247	0.189	1.208	0.117	1.125
High income	–0.900***	0.406	–0.831***	0.436	–0.811***	0.445

Enrollment	—	—	−0.499	0.067	−0.557	0.573
Employed	—	—	0.071	1.073	−0.035	0.965
GPA	—	—	−0.528***	0.590	−0.292**	0.747
Freshman involvement	—	—	−0.163	0.850	−0.171	0.843
Loan Debt ($0 omitted)						
Less than $10,000	—	—	—	—	0.626**	1.870
$10,000-$30,000	—	—	—	—	1.056***	2.874
More than $30,000	—	—	—	—	0.557	1.745
Other loan	—	—	—	—	0.168	1.183
Credit card use	—	—	—	—	−0.067***	0.935
Independent	—	—	—	—	0.038	1.038
Chi-square	96.499***		120.233***		209.384***	

[a]Sample size is reduced to account for only those students who received some form of financial aid.
†< .10; *< .05; **< .01; ***< .001.

Table 5. Logistic Regression Results for Model 2, Probability that Student Reports Difficulty Persisting to Degree Due to Consumer Debt (N = 2,258)

	Stage 1		Stage 2		Stage 3	
Variable	Point estimate	Odds-Ratio	Point estimate	Odds-Ratio	Point estimate	Odds-Ratio
Gender	–0.019	0.981	0.034	1.035	–0.111	0.895
Race	–0.524**	0.592	–0.461**	0.631	–0.318†	0.728
Year in school (Freshman omitted)						
Sophomore	–0.334†	0.716	–0.390*	0.677	–0.537**	0.584
Junior	–0.401*	0.670	–0.449*	0.638	–0.676***	0.509
Senior	–0.609***	0.544	–0.709***	0.492	–1.043***	0.352
Parents' education (Less than high school omitted)						
College or more	–0.366*	0.693	–0.395*	0.674	–0.214	0.807
Less than college	–0.053	0.948	–0.120	0.887	–0.003	0.997
Parents' income (Middle income omitted)						
Low income	0.443**	1.557	0.412**	1.510	0.378*	1.460
High income	–0.828***	0.437	–0.809***	0.445	–0.725***	0.484

Enrollment	—	—	–0.605*	0.546	–0.481	0.618
Employed	—	—	0.054	1.056	–0.041	0.960
GPA	—	—	–0.626***	0.535	–0.418***	0.658
Freshman involvement	—	—	–0.192	1.212	0.286*	1.332
Loan Debt ($0 omitted)						
Less than $10,000	—	—	—	—	0.223	1.250
$10,000-$30,000	—	—	—	—	0.382*	1.465
More than $30,000	—	—	—	—	0.253	1.288
Other loan	—	—	—	—	0.431*	1.538
Credit card use	—	—	—	—	–0.079***	0.924
Credit card debt ($0 omitted)						
Less than $1,000	—	—	—	—	0.134	1.144
$1,000-$3,000	—	—	—	—	0.234	1.264
More than $3,000	—	—	—	—	0.402	1.495
Independent	—	—	—	—	0.177	1.193
Chi-square	107.162***		144.406***		276.208***	

†< .10; *< .05; **< .01; ***< .001.

$30,000 are more likely to report difficulty persisting than those with no student loan debt. Further, students with other loans in their own name were 54% more likely to report difficulty persisting based on consumer debt. Whereas the actual amount of credit card debt does not prove to be a significant predictor in model two, credit card use behavior has an inverse relationship with difficulty persisting, as more responsible credit card use is associated with a lower probability of difficulty persisting.

Logistic regression results for the third model, whether students have ever reduced their credit hours for financial reasons, are presented in Table 6. Females are significantly less likely (21%) than males to report reducing their hours for financial reasons. Relative to students from middle-income households, students from low-income households are more likely to decrease their hours for financial reasons, whereas those from high-income households are not statistically different. The results show significant effects for all of the student involvement measures. Being enrolled full-time, having a higher GPA, and freshman involvement are all associated with a lower probability of reducing one's hours for financial reasons. Being employed is associated with roughly a 67% increase in the probability of students reducing their credit hours for financial reasons.

Similar to the previous models, student loan debt appears to have an impact on student persistence behavior. Whereas students reporting debt levels between $10,000 and $30,000 are more likely to reduce their hours for financial reasons than those with no student loan debt, students with more than $30,000 in debt are no different from those with no debt. Students who had other debts in their name are more likely to reduce their hours, as are those students who are financially independent. As in the prior models, students who report more responsible credit card use are less likely to reduce their hours when compared to those with more risky credit card behavior.

In model four, a much more specific sub-set of the student population is analyzed. Specifically, the fourth analysis focuses on those students who felt compelled to drop out of school for a time due to financial reasons. As the present analysis deals with respondents who are currently enrolled as students, those reporting that they have dropped out are students who dropped out and have chosen to return. Results for the fourth model are presented in Table 7. Looking at the results from stage 1 to stage 3, student involvement and financial variables dominate in terms of significance. Gender is significant, as females are more likely than males to have never dropped out of school for financial reasons. Students enrolled full-time, those with higher GPAs, and those who report being involved as freshmen are all less likely to report dropping out for financial reasons. Employment status is significant, with employed students indicating a lesser likelihood of having ever dropped out for financial reasons.

As in the previous models, many of the same financial variables are significant for model four. Increasing levels of student loan debt are associated with a greater probability of students dropping out, though students with over $30,000 in debt

are not significantly different from those with no student loan debt. Students who currently have other loans in their own name or who are financially independent from their parents are also more likely to report having dropped out for financial reasons. As in the prior models, students who reported more responsible credit card use are less likely to report having dropped out for financial reasons.

DISCUSSION

The present findings build upon the available literature by providing unique insights into student perceptions of debt and involuntary drop-out behavior. The first two models analyze student perceptions of debt. In both models, interesting class rank effects were noted. Specifically, freshmen were more likely to report more difficulty persisting due to the emotional burden of both financial aid and consumer debt. This is somewhat surprising as debt is likely to increase over the years, thus increasing the burden on students. It is unclear at this time as to whether this effect is due to growing institutional commitment or whether student loans tend to feel more daunting when one is just starting the process. Where significant, the variables of parental income and education behaved as expected, with higher levels of each being associated with less difficulty persisting. In looking at the actual student loan debt amount, there appears to be a u-shaped relationship, with difficulty increasing with increasing debt up to a point, and decreasing thereafter. This is a variable that has shown inconsistencies in the past, so it is unclear as to what might be the cause of the present observations (Gross et al., 2007; McElroy, 2005; Nora et al., 2006; St. John et al., 2000; Wohlgemuth, 2007). It is possible that the results are due to the small number of respondents with debt burdens greater than $30,000 in the present analysis ($N = 88$, or roughly 6% of the sample).

Whereas previous research has suggested a significant relationship between institutional involvement and persistence (Spady, 1970; Tinto, 1993), freshmen involvement was associated with students being more likely to report difficulty persisting due to the emotional burden of their consumer debt. This finding was unexpected based on the prior research, though previous studies analyzed behavior rather than student perceptions. The introduction of a credit card use variable provided strong predictive power in the present analysis. In both of the models, more responsible credit card use behavior was associated with a lower likelihood of students reporting feeling burdened by their debts. This makes sense given the increasing concern over how students use credit cards, as less responsible borrowing will necessarily result in greater debt burdens, particularly when coupled with other debt sources such as student loans.

Models three and four address actual student behavior in the context of hours enrolled and whether or not students have ever dropped out of school for financial reasons. For the fourth model, it is important to discuss a distinct limitation. Based on the sample utilized, we are only able to discuss behaviors observed among a unique population, as individuals who actually reported dropping out are those

Table 6. Logistic Regression Results for Model 3, Probability that Student Reduced Credit Hours for Financial Reasons ($N = 2,258$)

	Stage 1		Stage 2		Stage 3	
Variable	Point estimate	Odds-Ratio	Point estimate	Odds-Ratio	Point estimate	Odds-Ratio
Gender	–0.183	0.833	–0.119	0.887	–0.225†	0.799
Race	–0.143	0.867	–0.032	0.969	0.166	1.180
Year in school (Freshman omitted)						
Sophomore	0.715***	2.043	0.548**	1.730	0.471*	1.602
Junior	0.695***	2.003	0.436*	1.547	0.269	1.310
Senior	0.896***	2.449	0.534**	1.706	0.239	1.271
Parents' education (Less than high school omitted)						
College or more	–0.272†	0.762	–0.190	0.827	0.054	1.055
Less than college	0.016	1.016	–0.041	0.960	0.086	1.090
Parents' income (Middle income omitted)						
Low income	0.536***	1.710	0.457***	1.579	0.312*	1.366
High income	–0.505***	0.603	–0.352**	0.703	–0.224	0.799

Enrollment	—	—	−1.138***	0.320	−1.120***	0.326
Employed	—	—	0.825***	2.283	0.675***	1.964
GPA	—	—	−0.650***	0.522	−0.432***	0.649
Freshman involvement	—	—	−0.365***	0.694	−0.279*	0.756
Loan Debt ($0 omitted)						
Less than $10,000	—	—	—	—	0.232	1.261
$10,000-$30,000	—	—	—	—	0.322*	1.379
More than $30,000	—	—	—	—	0.099	1.105
Other loan	—	—	—	—	0.310*	1.363
Credit card use	—	—	—	—	−0.052***	0.949
Credit card debt ($0 omitted)						
Less than $1,000	—	—	—	—	0.226	1.253
$1,000-$3,000	—	—	—	—	0.056	1.057
More than $3,000	—	—	—	—	0.192	1.212
Independent	—	—	—	—	0.959***	2.610
Chi-square	107.162***		233.400***		370.824***	

†< .10; *< .05; **< .01; ***< .001.

Table 7. Logistic Regression Results for Model 4, Probability that Student Never Dropped Out of School for Financial Reasons (N = 2,258)

	Stage 1		Stage 2		Stage 3	
Variable	Point estimate	Odds-Ratio	Point estimate	Odds-Ratio	Point estimate	Odds-Ratio
Gender	0.625**	1.869	0.481*	1.618	0.678**	1.970
Race	0.223	1.250	–0.039	0.961	–0.324	0.724
Year in school (Freshman omitted)						
Sophomore	–0.892*	0.410	–0.835*	0.434	–0.676	0.508
Junior	–0.879*	0.415	–0.664†	0.515	–0.359	0.698
Senior	–1.027**	0.358	–0.769*	0.463	–0.262	0.770
Parents' education (Less than high school omitted)						
College or more	0.815**	2.260	0.702*	2.018	0.368	1.445
Less than college	0.397	1.487	0.398	1.489	0.289	1.336
Parents' income (Middle income omitted)						
Low income	–0.736**	0.479	–0.625*	0.535	–0.411	0.633
High income	0.127	1.136	0.022	1.022	–0.367	0.693

Enrollment	—	—	1.167**	3.214	0.916*	2.498
Employed	—	—	0.107	1.113	0.444†	1.559
GPA	—	—	0.815***	2.259	0.559**	1.748
Freshman involvement	—	—	0.853**	2.348	0.763**	2.144
Loan Debt ($0 omitted)						
Less than $10,000	—	—	—	—	–0.837**	0.433
$10,000-$30,000	—	—	—	—	–0.844**	0.430
More than $30,000	—	—	—	—	–0.664	0.515
Other loan	—	—	—	—	–0.658**	0.518
Credit card use	—	—	—	—	–0.072***	1.074
Credit card debt ($0 omitted)						
Less than $1,000	—	—	—	—	0.087	1.091
$1,000-$3,000	—	—	—	—	0.479	1.615
More than $3,000	—	—	—	—	0.075	1.078
Independent	—	—	—	—	–1.518***	0.219
Chi-square	45.819***		86.387***		184.623***	

†< .10; *< .05; **< .01; ***< .001.

who have opted to return to the academic pursuits, and may be wholly different from those individuals who choose to leave and never return. Previous findings regarding gender effects are supported in the present analysis, as females tend to be less likely to report having ever dropped out or reduced hours for financial reasons (Reynolds & Weagley, 2003; Wohlgemuth et al., 2007). Previous studies have suggested that this effect may be due to the greater market involvement of males in general, as it may result in male students discounting the value of an education in favor of ceasing school to work full time (Reynolds & Weagley, 2003). Further, in the early stages of both models, the class rank variable largely behaves as predicted. Relative to freshmen, upperclassmen are more likely to reduce their hours or drop out for financial reasons, which is consistent with increasing debt burdens. However, class rank loses significance when financial factors are added to the analysis. This suggests that it is not necessarily how many years one has been accruing debt that is burdensome, but the absolute value of the debt itself. Similar effects are noted for parent's education and income.

In general, the student and financial factors dominate the third and fourth model, with each of the selected variables largely behaving as expected. As suggested in the prior research, enrollment status appears to be important, as does GPA (Baum, 2003; Bradburn, 2002; Haynes, 2008, Nora & Cabrera, 1996; Prather & Hand, 1986; Tinto, 1975). Full-time students were less likely to drop out or reduce their hours, and higher GPAs were associated with a reduced likelihood of both behaviors as well. Analysis of the employment status variable yields some interesting findings. In model three, being employed was associated with a greater likelihood of reducing enrollment hours. This may not be surprising considering that time is a finite resource, and more time allocated to work necessarily reduces the time available for other activities. However, the present data are cross-sectional in nature, so there is little that can be said in regards to causality. Previous research has suggested that the relationship between employment and persistence is non-linear, with the beneficial effects of employment increasing at a decreasing rate with hours worked (Baum, 2003). Further, the presence of other debt was positively related to both studied behaviors, as was being financially independent. As in the first two models, the relationship between student loan debt and persistence behavior was not entirely straightforward. While individuals with debt amounts between $10,000 and $30,000 were more likely to drop out or reduce their hours than students with no student loan debt, the same did not hold true for those owing $30,000 or more. Again, this may be a result of the relatively low number of students with debt burdens greater than $29,999. As in the previous models, responsible credit card use was associated with students being less likely to drop out or reduce their hours due to financial reasons. This suggests that the misuse of credit cards may be particularly problematic from the standpoint of student persistence, as irresponsible behaviors add to the financial burdens (both perceived and real) faced by students.

CONCLUSIONS

As in the prior literature, findings related to student financial aid were largely inconclusive. For many students, financial aid is instrumental in making college an affordable, realistic option. However, with more aid coming in the form of loans, questions have been raised as to how this might impact student persistence behavior. This is an area that warrants further study in the future, particularly given the severe implications of reduced student persistence. Education is known to provide positive effects for society as a whole, as education may be viewed as a positive externality from an economic standpoint (Baum & Ma, 2007; Reynolds & Weagley, 2003). That is, education does not simply provide positive returns to the student receiving the education. Rather, as one becomes more educated, they tend to engage in a variety of behaviors that benefit society as a whole (Geske & Cohn, 1998). Future research would likely benefit from an analysis of different loan types, an issue not considered in the present study.

The findings provide unique insights into student perceptions and persistence behavior as it places many of the previously studied variables in context with an emphasis on financial factors. The present study provides a sense of which other variables play a role in failure to persist for purely financial reasons, which is a key area of emphasis, particularly given rising costs of college and the current credit crunch. As credit card access becomes more restricted for this population, will that prove to be a positive or a negative?

The present analysis also places emphasis on Tinto's earlier assertion that it is important to differentiate student persistence behaviors (i.e., students leave for a variety of reasons). Those leaving involuntarily primarily based on financial reasons may not fit the traditional model as well. Further, the fact that education may be viewed as a personal investment has often been utilized as an argument in favor of a system based on student loans, since individuals will reap the considerable benefits associated with obtaining an education. However, this argument often fails to consider the positive externalities that result from individuals becoming more educated. Evidence suggests that increasing an individual's education provides benefits to society as well.

More needs to be understood about the way in which students assess the costs and benefits of a college education in the context of the present results. In some cases, students may drop out for reasons that they consider to be rational based on changes to the perceived or actual costs and benefits. It is unclear the extent to which students understand the value of an education, both from a personal and societal standpoint. The present findings provide some evidence that students with more responsible financial behavior (in this case credit card use) were more likely to persist. Previous research has provided evidence of a link between responsible credit card use and financial knowledge, indicating that financial education may be beneficial for college students or those about to enter college (Robb, 2009). Administrators should consider weighing the costs and benefits of

implementing more wide-spread financial education programs on campus in light of the present findings.

REFERENCES

Baum, S. (2003). The role of student loans in college access. *National Dialogue on Student Financial Aid Research Report 5.*

Baum, S., & Ma, J. (2007). *Education pays: The benefits of higher education for individuals and society*. Washington, DC: The College Board.

Baum, S., & Payea, K. (2004). *Education pays 2004: The benefits of higher education for individuals and society*. Washington, DC: The College Board.

Baum, S., & Saunders, D. (1998). *Life after debt: Results of the National Student Loan Survey*. Braintree, MA: Nellie Mae.

Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education*. Chicago: The University of Chicago Press.

Betts, J. R., & McFarland, L. L. (1995). Safe port in a storm: The impact of labor market conditions on community college enrollments. *The Journal of Human Resources, 30*(4), 741-765.

Bradburn, E. M. (2002). *Short-term enrollment in postsecondary education: Student background and institutional differences in reasons for early departure, 1996-98* (NCES 2003153). Washington, DC: U.S. Government Printing Office.

Braunstein, A., McGrath, M., & Pescatrice, D. (2000/2001). Measuring the impact of financial factors on college persistence. *Journal of College Student Retention: Research, Theory & Practice, 2*(3), 191-204.

Brawer, F. B. (1996). *Retention-attrition in the nineties. U.S. California*. Eric Digest ED393510. Retrieved May 28, 2009 from http://www.eric.ed.gov:80/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/14/71/ea.pdf

Braxton, J. M. (Ed.). (2000). *Reworking the student departure puzzle* (1st ed.). Nashville: Vanderbilt University Press.

Braxton, J. M., Johnson, R. M., & Shaw-Sullivan, A. V. (1997). Appraising Tinto's theory of college student departure. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 12). New York: Agathon Press.

Bryant, W. K. (1990). *The economic organization of the household.* Cambridge, UK: Cambridge University Press.

Cabrera, A. F., Nora, A., & Castañeda, M. B. (1992). The role of finances in the persistence process: A structural model. *Research in Higher Education, 33*(5), 571-593.

Cofer, J., & Somers, P. (1999). An analytical approach to understanding student debtload response. *Journal of Student Financial Aid, 29*(3), 25-44.

College Board. (2005). *Trends in college pricing*. Retrieved May 20, 2007, from www.collegeboard.com/prod_downloads/press/cost05/trends_college_pricing_05.pdf

College Board. (2007a). *Trends in college pricing.* Trends in Higher Education Series. College Board. Retrieved May 25, 2007, from www.collegeboard.com/prod_downloads/press/cost06/trends_college_pricing_06.pdf

College Board. (2007b). *Trends in student aid.* Trends in Higher Education Series. College Board. Retrieved May 25, 2007, from www.collegeboard.com/prod_downloads/about/news_info/trends/trends_aid_07.pdf

Commercial Law Bulletin (anonymous). (1998). Student credit card debt. *Commercial Law Bulletin, 13*(6), 7.

Geske, T. G., & Cohn, E. (1998). Why is a high school diploma no longer enough? In R. Fossey & M. Bateman (Eds.), *Condemning students to debt: College loans and public policy* (pp. 19-36). New York: Teachers College Press, Columbia University.

Gross, J. P. K., Hossler, D., & Ziskin, M. (2007). Institutional aid and student persistence: An analysis of the effects of institutional financial aid at public four-year institutions. *NASFAA Journal of Student Financial Aid, 37*(1), 28-39.

Hauptman, A. M. (2008). Participation and persistence in the United States. *International Higher Education, 52*, 19-21.

Haynes, R. M. (2008). The impact of financial aid on postsecondary persistence: A review of literature. *NASFAA Journal of Student Financial Aid, 37*(3), 30-35.

Heller, D. E., & Marin, P. (Eds.). (2002). *Who should we help? The negative social consequences of merit scholarships.* Cambridge, MA: The Civil Rights Project at Harvard University.

Leppel, K. (2005). College persistence and student attitudes toward financial success. *College Student Journal, 39*(2), 223-241.

Lyons, A. C. (2004). A profile of financially at-risk college students. *The Journal of Consumer Affairs, 38*(1), 56-80.

McElroy, L. (2005). *Student aid and university persistence: Does debt matter?* Montreal: Canada Millennium Scholarship Foundation, Number 23.

National Center for Education Statistics (NCES). (2008). *The condition of education 2008* (NCES 2008-031). United States Department of Education. Retrieved June 5, 2009 from http://nces.ed.gov/fastfacts/display.asp?id=77

Nellie Mae. (2005). *Undergraduate students and credit cards: An analysis of usage rates and trends.* Retrieved January 25, 2007 from http://www.nelliemae.com/library/research.html

Nora, A., Barlow, L., & Crisp, G. (2006). Examining the tangible and psychosocial benefits of financial aid with student access, engagement, and degree attainment. *American Behavioral Scientist, 49*(12), 1636-1651.

Nora, A., & Cabrera, A. (1996). The role of perceptions of prejudice and discrimination on the adjustment of minority students to college. *Journal of Higher Education, 67*(2), 119-148.

Norvilitis, J. M., Szablicki, P. B., & Wilson, S. D. (2003). Factors influencing levels of credit card debt in college students. *Journal of Applied Social Psychology, 33*(5), 935-947.

Paulson, M. B. (1990). *College choice: Understanding student enrollment behavior.* ASHE-ERIC Higher Education Report No. 6. Washington, D.C.: The George Washington University, School of Education and Human Development.

Pinto, M. B., & Mansfield, P. M. (2006). Financially at-risk college students: An exploratory investigation of student loan debt and prioritization of debt repayment. *NASFAA Journal of Student Financial Aid, 36*(2), 22-32.

Pinto, M. B., Parente, D. H., & Palmer, T. S. (2001, January/February). College student performance and credit card usage. *Journal of College Student Development, 42*(1), 49-58.

Prather, J. E., & Hand, C. A. (1986). *Retention of non-traditional students.* U.S. Georgia. ERIC Document No. ED274269.

Reynolds, L. M., & Weagley, R. O. (2003). Academic persistence in higher education. *Consumer Interests Annual,* p. 49.

Robb, C. A. (2010). An exploration of the relationship between college student personal financial knowledge and credit card use behaviors. *Consumer Interests Annual, 56.*

Roberts, J. A., & Jones, E. (2001). Money attitudes, credit card use, and compulsive buying among American college students. *Journal of Consumer Affairs, 35*(2), 213-240.

Schemo, D. J. (2002, March 8). More graduates mired in debt, survey finds. *The New York Times*, p. A18.

Spady, W. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange, 1*, 64-85.

St. John, E., Cabrera, A., Nora, A., & Asker, E. (2000). Economic influences on persistence reconsidered: How can finance research inform the reconceptualization of persistence models. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (1st ed.). Nashville: Vanderbilt University Press.

Swarthout, L. (2006). *Paying back, not giving back: Student debt's negative impact on public service career opportunities*. The State Public Interest Groups' Higher Education Project.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*(1), 89-125.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.

Wohlgemuth, D., Whalen, D., Sullivan, J., Nading, C., Shelley, M., & Wang, Y. (2007). Financial, academic, and environmental influences on the retention and graduation of students. *Journal of College Student Retention: Research, Theory, and Practice, 8*(4), 457-475.

Zaff, J. (2004, April 18). Degree of debt. *The Baltimore Sun*, p. 5C.

Direct reprint requests to:

Cliff A. Robb, Ph.D.
Assistant Professor
University of Alabama
304 Adams Hall
Box 870158
Tuscaloosa, AL 35487
e-mail: crobb@ches.ua.edu